CHAPTER 6

FUTURE DIRECTIONS IN THE COLLINS RIVER WATERSHED

6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 stormwater rules (implemented under the NPDES program) are transitioning from Phase 1 to Phase 2. More information on stormwatrer rules may be found at: http://www.state.tn.us/environment/wpc/stormh2o/MS4.htm.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Collins River Watershed as well as specific NPDES permittee information.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permitees, business people, farmers, and local river conservation interests. Locations for meetings were frequently chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: http://www.state.tn.us/environment/wpc/public.htm.

6.2.A. Year 1 Public Meeting. The first Caney Fork River Watershed public meeting was held April 17, 1997 in Smithville. The goals of the meeting were to 1)present, and review the objectives of, the Watershed Approach, 2)introduce local, state, and federal agency and nongovernment organization partners, 3)review water quality monitoring strategies, and 4)solicit input from the public.

Major Concerns/Comments

- Wasteload allocations and their use in running models
- Lake management
- Communication with citizen groups
- The effect of naming the Caney Fork River an Outstanding National Resource Water (ONRW)
- Fish postings

6.2.B. Year 3 Public Meeting. The second Caney Fork River Watershed public meeting was held July 13, 1999 at the Smithville Courthouse. The goals of the meeting were to 1)provide an overview of the watershed approach, 2)review the monitoring strategy, 3)summarize the most recent water quality assessment, 4)discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and 5)discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

Major Concerns/Comments

- Cows in the creek adding to Nonpoint source pollution
- Increased discharges to 303(d)-listed streams from a planned industrial development
- Development by the City of Cookeville around Mine Lick Creek
- Inadequate protection of sinkholes

6.2.C. Year 5 Public Meeting. The third scheduled Collins River Watershed public meeting was held November 4, 2003 at the McMinnville Administrative Center. The meeting featured five educational components:

- Overview of draft Watershed Water Quality Management Plan slide show
- Benthic macroinvertebrate samples and interpretation
- SmartBoard™ with interactive GIS maps
- "How We Monitor Streams" self-guided slide show
- "Why We Do Biological Sampling" self-guided slide show

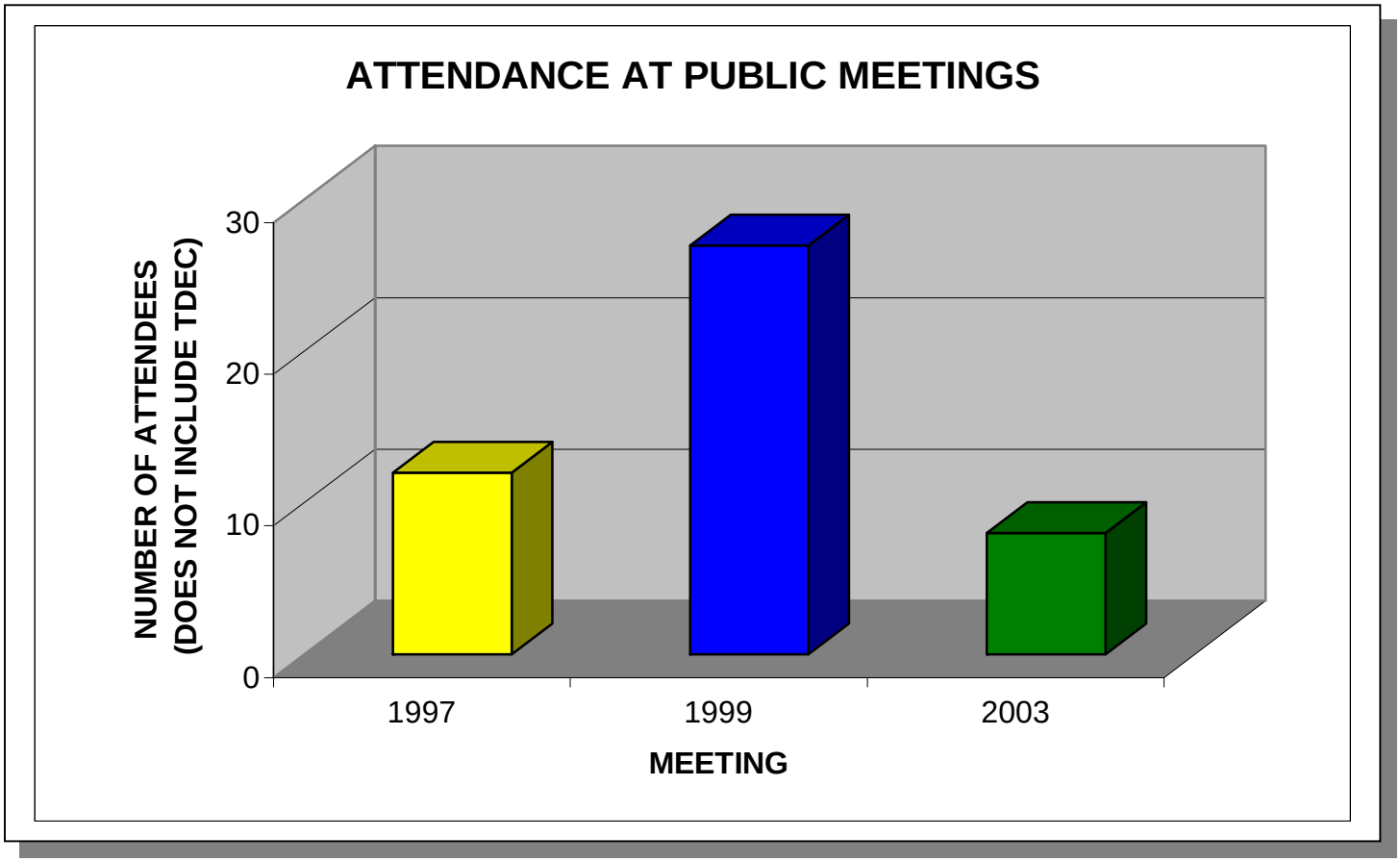

Figure 6-1. Attendance at Public Meetings in the Collins River Watershed. *The 1997 and 1999 watershed meeting numbers represent Collins River and Caney Fork River Watersheds joint meetings.*

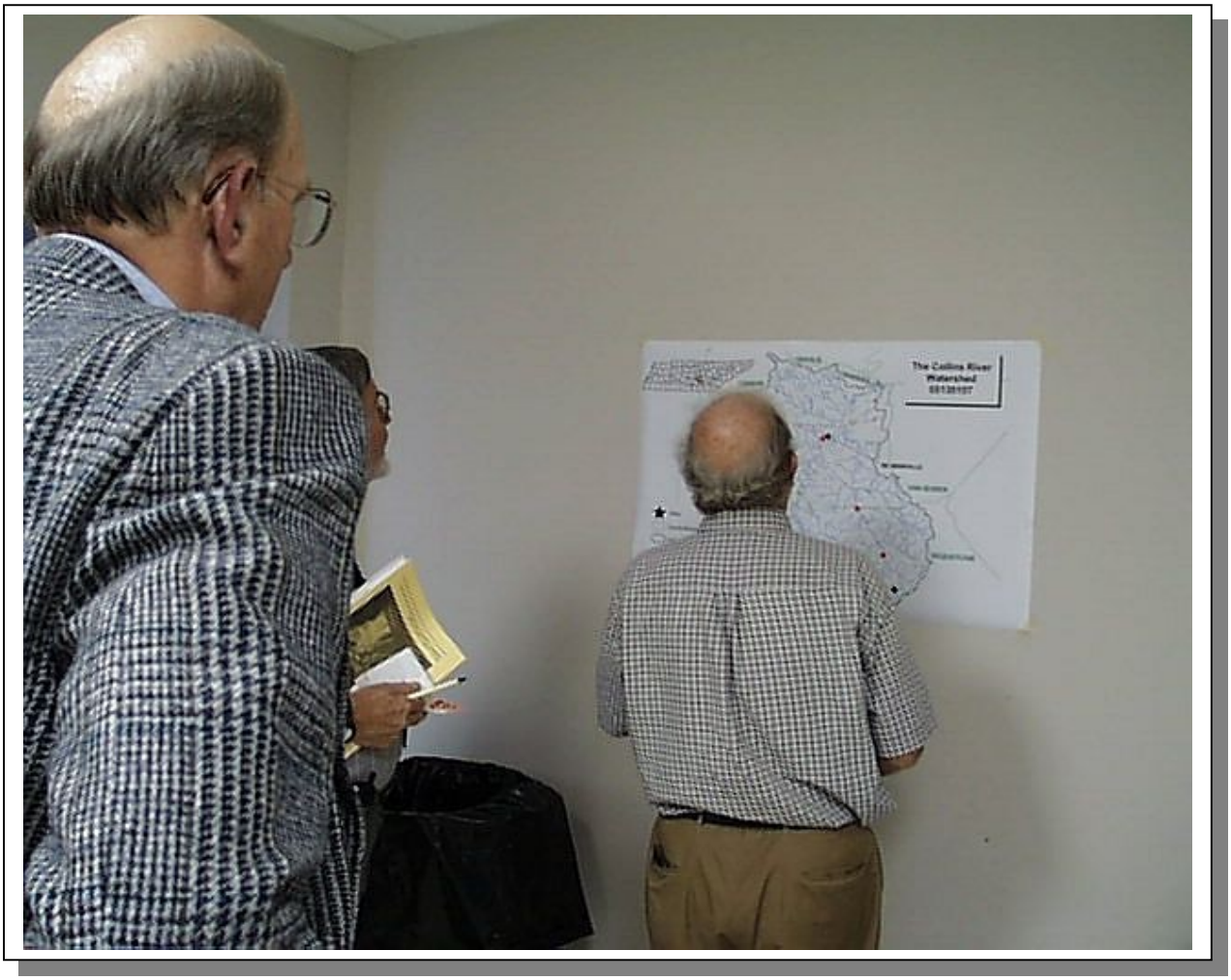

Figure 6-2. Maps are a convenient way to illustrate water quality data in a way that the public can easily understand.

Figure 6-3. Displays, like this one on biological indicators of water quality, foster lots of questions and discussions among meeting participants.

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at http://www.state.tn.us/environment/wpc/wpcppo/. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pcs/pcs_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at:
http://www.state.tn.us/environment/wpc/tmdl.php

Approved TMDL:

Dry Creek, Gath Branch, Unnamed Trib to Mountain Creek, Hickory Grove Branch, Mud Creek, Dog Branch, and Oakland Branch. TMDL for siltation and habitat alteration approved February 13, 2003:
http://www.state.tn.us/environment/wpc/CollinsSed03.pdf

TMDLs are prioritized for development based on many factors.

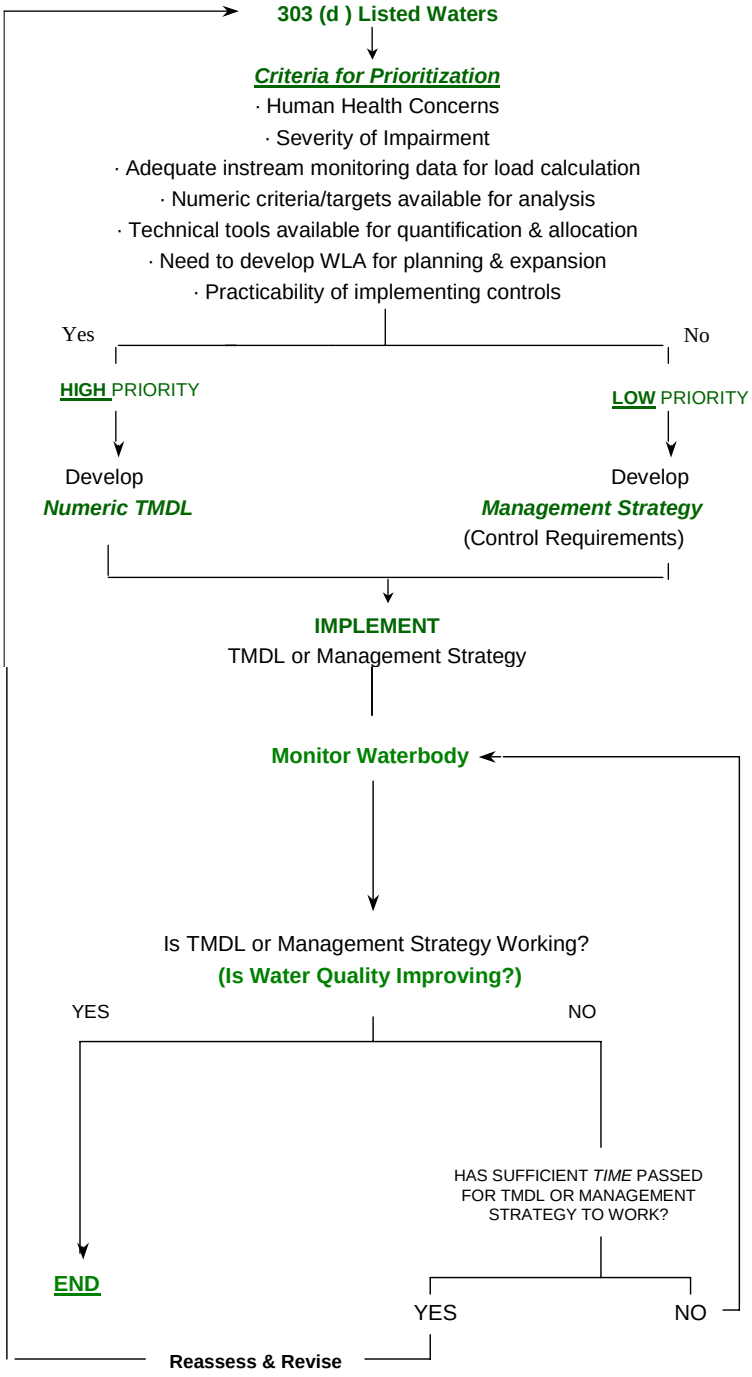

Figure 6-4. Prioritization scheme for TMDL Development.

6.3.B. Nonpoint Sources

Common nonpoint sources of pollution include urban runoff, riparian vegetation removal, and inappropriate land development, agricultural, and road construction practices. Since nonpoint pollution exists essentially everywhere rain falls and drains to a stream, existing point source regulations can have only a limited effect, so other measures are necessary.

There are several state and federal regulations that address some of the contaminants impacting waters in the Collins River Watershed. Most of these are limited to only point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include voluntary efforts by landowners and volunteer groups, while others may involve new regulations. Many agencies, including the Tennessee Department of Agriculture and NRCS, offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes certain types of impairments, causes, suggested improvement measures, and control strategies. The suggested measures and streams are only examples and efforts should not be limited to only those streams and measures mentioned.

6.3.B.i. Sedimentation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres are disturbed. In the spring of 2003, that threshold became 1 acre. The general permit issued for such construction sites sets out conditions for maintenance of the sites to minimize pollution from stormwater runoff, including requirements for installation and inspection of erosion controls. Also, the general permit imposes more stringent inspection and self-monitoring requirements on sites in the watershed of streams that are already impaired due to sedimentation. An example in the Collins River Watershed is Oakland Branch. Regardless of the size, no construction site is allowed to cause a condition of pollution.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC personnel, and are likely to have enforcement actions for failure to control erosion. Historically, however, construction activities have not been a large source of sediment problems within the Collins River Watershed due to its rather sparsely populated characteristics.

6.3.B.i.b. From Channel and/or Bank Erosion. Many streams within the Collins River Watershed suffer from varying degrees of streambank erosion. When stream channels are altered, or when large tracts of land are cleared increasing storm runoff, banks can

become unstable and highly erodable. Destabilized banks contribute sediment load and lose their riparian vegetation. This cycle is especially problematic in certain areas of the Collins River Watershed where the very sandy plateau soils and shallow rooted trees are especially vulnerable. Most of the land and channel alterations are due to agricultural practices or mining operations.

Several agencies such as the Natural Resources Conservation Service and Tennessee Department of Agriculture, as well as citizen groups, are working to stabilize portions of streambanks. Other methods or controls that might be necessary to address common problems are:

Voluntary activities

- Re-establishment of bank vegetation (examples: Dry Branch and Mud Creek).
- Establish buffer zones around streams flowing through row crop fields or nurseries (examples: Dog Branch and Bluff Spring Branch).
- Establish off channel watering areas for cattle by moving watering troughs and feeders back from stream banks (examples: Gath Branch and Mountain Branch tributaries).
- Limit cattle access to streams and bank vegetation (example: Hickory Grove Branch).

Additional strategies

- Better community planning for the impacts of development on small streams, especially development in growing areas (examples: small streams in McMinnville and Grundy County resort towns).
- Restrictions requiring post construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion, (example: Oakland Branch).
- Additional restrictions on logging in streamside management zones.
- Prohibition on clearing of stream and ditch banks (example: various small tributaries to the Collins River). *Note: Permits may be required for any work along streams.*
- Additional restriction to road and utilities crossings of streams.
- Restrictions on the use of off-highway vehicles on stream banks and in stream channels.

6.3.B.i.c. From Agriculture and Silviculture. Even though there is an exemption in the Water Quality Control Act which states that normal agricultural and silvicultural practices which do not result in a point source discharge do not have to obtain a permit, efforts are being made to address impacts due to these practices.

The Master Logger Program has been in place for several years to train loggers how to plan their logging activities and to install Best management Practices that lessen the impact of logging activities. Recently, laws and regulations were enacted which established the expected BMPs to be used and allows the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop a logging operation that has failed to install these BMPs and so are impacting streams. Most timber harvest in the Collins River Watershed are small and isolated.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and soil erosion. Agencies such as the Natural Resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee department of Agriculture have worked to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures. Of particular concern in the Collins River Watershed is the burgeoning nursery industry centered around McMinnville.

More stringent controls and oversight of water withdrawals and Nonpoint fertilizer runoff from the many nursery operations are needed to improve the quality of many streams in the area, including Mountain Creek tributaries, Martin Creek, Bluff Springs Branch, Gath Branch, Hickory Grove Branch, and other small tributaries to the Collins River.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter in streams and storm drains due to pets, livestock and wildlife. Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. Septic tank and field lines are regulated by the Division of Ground Water Protection within Cookeville Environmental Assistance Center and delegated county health departments. In addition to discharges to surface waters, businesses may employ either subsurface or surface disposal of wastewater. The Division of Water Pollution Control regulates surface disposal.

Other measures that may be necessary to control pathogens are:

Voluntary activities

- Off-channel watering of livestock (example: Hoover Branch).
- Limiting livestock access to streams (example: North Prong Barren River).
- Proper management of animal waste from feeding operations.

Enforcement strategies

- Greater enforcement of regulations governing on-site wastewater treatment.
- Timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Identification of Concentrated Animal Feeding Operations not currently permitted, and enforcement of current regulations.

Additional strategies

- Restrict development in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables. This is particularly important in the Collins River watershed given the geology of the Cumberland Plateau and escarpment.

- Develop and enforce leash laws and controls on pet fecal material in areas with higher population densities.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces and from fertilized lawns and croplands.

Other sources of nutrients can be addressed by:

Voluntary activities

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones (examples of streams that could benefit are Hills Creek and other areas along stream channels). Streamside vegetation can filter out many nutrients and other pollutants before they reach the stream. These riparian buffers are also vital along livestock pastures.
- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae. As a general rule, all stream channels suffer from some canopy removal.
- Discourage impoundments. Ponds and lakes do not aerate water. Firescald Creek has suffered from an impoundment. *Note: Permits may be required for any work on a stream, including impoundments.*

6.3.B.iv. Toxins and Other Materials.

In the Collins River Watershed, a relatively small amount of toxic substances enter streams due to stormwater runoff from industrial facilities and urban areas. More stringent inspection and regulation of permitted industrial facilities, and local stormwater quality initiatives, could help reduce the amount of contaminated runoff reaching state waters. Examples of streams which would benefit from these measures include several small unnamed streams in the McMinnville urban area.

Many materials enter our streams due to apathy, or lack of civility or knowledge by the public. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all examples of pollution in streams. Some can be addressed by:

Voluntary activities

- Providing public education.
- Painting warnings on storm drains that connect to a stream. (This would benefit Oakland Branch).
- Sponsoring community clean-up days.
- Landscaping of public areas.
- Encouraging public surveillance of their streams and reporting of dumping activities to their local authorities.

Needing regulation

- Prohibition of illicit discharges to storm drains.
- Litter laws and strong enforcement at the local level.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, "cleaning out" creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Measures that can help address this problem are:

Voluntary activities

- Organizing stream cleanups removing trash, limbs and debris before they cause blockage.
- Avoiding use of heavy equipment to clean out streams. Several small tributaries to the Collins River, as well as Bluff Springs Branch, Gath Branch, and Hickory Grover Branch, have suffered from such activities.
- Planting vegetation along streams to stabilize banks and provide habitat (nearly all streams can benefit from this).
- Encouraging developers to avoid extensive culverts in streams.

Current regulations

- Restrict modification of streams by such means as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.

Additional Enforcement

- Increased enforcement may be needed when violations of current regulations occur.

6.3.B.v. Acid Mine Runoff.

The Cumberland plateau has had a long history of coal mining, much of which was done prior to any type of environmental regulation. Unfortunately, the legacy of many of these old mining sites is severe impacts to the streams that drain them in the form of pollution from metals and low pH from sulfuric acid.

Streams that would benefit from remediation projects include the Upper Collins River, Ranger Creek and Dry Creek.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Collins River Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between January 1, 2001 and December 31, 2006. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of Collins River Watershed*.

6.4.A. Municipal Permits

TN0066940 Dibrell School Waste Water Treatment Plant

Discharger rating: Minor
City: McMinnville
County: Warren
EFO Name: Cookeville
Issuance Date: 8/29/02
Expiration Date: 8/30/07
Receiving Stream(s): Mountain Creek mile 9.7
HUC-12: 051301070403
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Septic tank and recirculating sand filter

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
CBOD5	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
CBOD5	All Year	30	MAvg Conc	mg/L	Monthly	Grab	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Weekdays	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	Monthly	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	Monthly	Grab	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	2/Week	Grab	Effluent
TRC	All Year	2	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
TSS	All Year	30	MAvg Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	2/Week	Grab	Effluent
pH	All Year	6	DMin Conc	SU	2/Week	Grab	Effluent

Table 6-1. Permit Limits for Dibrell School Waste Water Treatment Plant.

EFO Comments:
The school WWTP (re-circulating sand filter) system seems to require more maintenance than similar systems. Recently a collection system pump was replaced. The discharge point is located less than a mile from the WWTP.

TN0023591 McMinnville Sewage Treatment Plant

Discharger rating: Major
City: McMinnville
County: Warren
EFO Name: Cookeville
Issuance Date: 1/31/02
Expiration Date: 1/31/07
Receiving Stream(s): Barren Fork River Mile 4.5
HUC-12: 051301070204
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: WAS to thickner to aerobic digestor to lap

Segment	TN05130107006_1000
Name	Barren Fork
Size	6.97
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Not Assessed), Irrigation (Supporting)
Causes	N/A
Sources	N/A

Table 6-2. Stream Segment Information for McMinnville STP.

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
48hr LC50: Ceriodaphnia Dubia	All Year	38	DMin Conc	Percent	Quarterly	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	38	DMin Conc	Percent	Quarterly	Grab	Effluent
Ammonia as N (Total)	All Year	10	DMax Conc	mg/L	Weekly	Composite	Effluent
Ammonia as N (Total)	All Year	5	WAvg Conc	mg/L	Weekly	Composite	Effluent
Ammonia as N (Total)	All Year	7.5	MAvg Conc	mg/L	Weekly	Composite	Effluent
Ammonia as N (Total)	All Year	250	DMax Load	lb/day	Weekly	Composite	Effluent
Ammonia as N (Total)	All Year	167	MAvg Load	lb/day	Weekly	Composite	Effluent
CBOD % Removal	All Year	40	DMin % Removal	Percent	Weekly	Calculated	% Removal
CBOD % Removal	All Year	85	MAvg % Removal	Percent	Weekly	Calculated	% Removal
CBOD5	All Year	40	DMax Conc	mg/L	Weekly	Composite	Effluent
CBOD5	All Year	25	DMin Conc	mg/L	Weekly	Composite	Effluent
CBOD5	All Year	35	MAvg Conc	mg/L	Weekly	Composite	Effluent
CBOD5	All Year	1168	DMax Load	lb/day	Weekly	Composite	Effluent
CBOD5	All Year	834	MAvg Load	lb/day	Weekly	Composite	Effluent
D.O.	All Year	3	DMin Conc	mg/L	Weekdays	Grab	Effluent
E. coli	All Year	126	MAvg Geo Mean	#/100mL	3/Week	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	3/Week	Grab	Effluent

Table 6-3a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	3/Week	Grab	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	Weekly	Composite	Effluent
TRC	All Year	0.18	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	Weekly	Composite	Effluent
TSS	All Year	35	MAvg Conc	mg/L	Weekly	Composite	Effluent
TSS	All Year	30	WAvg Conc	mg/L	Weekly	Composite	Effluent
TSS	All Year	1168	DMax Load	lb/day	Weekly	Composite	Effluent
TSS	All Year	1001	MAvg Load	lb/day	Weekly	Composite	Effluent
TSS % Removal	All Year	40	DMin % Removal	Percent	Weekly	Calculated	% Removal
TSS % Removal	All Year	85	MAvg % Removal	Percent	Weekly	Calculated	% Removal
pH	All Year	9	DMax Conc	SU	Weekdays	Grab	Effluent

Table 6-3b.

Tables 6-3a-b. Permit Limits for McMinnville Sewage Treatment Plant.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 19 overflows
- 18 bypasses

EFO Comments:
McMinnville STP has an excellent performance track. Sludge is aerobically digested and land applied. The sludge generation and storage capacity for the wet season was compared. The storage routinely reaches full capacity during the winter affecting the solids removal from the plant during the winter months. The City is in process to bid out the engineering design for Class A processing facility.

McMinnville Pretreatment
Considerable assistance was provided in the identification of the root cause of the total phenol violations by two Industrial Users in McMinnville. Local limits were recalculated and changes to the limits were approved. Categorical limits were not applied correctly at the end of the categorical treatment process and combined waste formula was required. Changes to the Industrial User permit language were recommended. Changes in the appropriate limits were required to reflect the more stringent applicable values.

TN0025372 West Warren- Viola Utility District Sewage Treatment Plant

Discharger rating: Minor
City: Morrison
County: Warren
EFO Name: Cookeville
Issuance Date: 1/31/02
Expiration Date: 1/31/07
Receiving Stream(s): Barren Fork River at mile 18.1
HUC-12: 051301070203
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: SBR to thickener to aerobic digester to landfill

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
BOD % removal	All Year	40	DMin % Removal	Percent	3/Week	Calculated	Percent Removal
BOD % removal	All Year	85	MAvg % Removal	Percent	3/Week	Calculated	Percent Removal
BOD5	All Year	45	DMax Conc	mg/L	3/Week	Composite	Effluent
BOD5	All Year	30	WAvg Conc	mg/L	3/Week	Composite	Effluent
BOD5	All Year	40	MAvg Conc	mg/L	3/Week	Composite	Effluent
BOD5	All Year	300	DMax Load	lb/day	3/Week	Composite	Effluent
BOD5	All Year	226	MAvg Load	lb/day	3/Week	Composite	Effluent
D.O.	All Year	1	DMin Conc	mg/L	Weekdays	Grab	Effluent
E. coli	All Year	126	MAvg Geo Mean	#/100mL	3/Week	Grab	Effluent
Fecal Coliform	All Year	1000	DMax Conc	#/100mL	3/Week	Grab	Effluent
Fecal Coliform	All Year	200	MAvg Geo Mean	#/100mL	3/Week	Grab	Effluent
Settleable Solids	All Year	1	DMax Conc	mL/L	3/Week	Composite	Effluent
TRC	All Year	0.5	DMax Conc	mg/L	Weekdays	Grab	Effluent
TSS	All Year	45	DMax Conc	mg/L	3/Week	Composite	Effluent
TSS	All Year	30	WAvg Conc	mg/L	3/Week	Composite	Effluent
TSS	All Year	40	MAvg Conc	mg/L	3/Week	Composite	Effluent
TSS	All Year	300	DMax Load	lb/day	3/Week	Composite	Effluent
TSS	All Year	226	MAvg Load	lb/day	3/Week	Composite	Effluent
TSS % Removal	All Year	85	MAvg % Removal	Percent	3/Week	Calculated	Percent Removal
TSS % Removal	All Year	40	DMin % Removal	Percent	3/Week	Calculated	Percent Removal
pH	All Year	9	DMax Conc	SU	Weekdays	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Weekdays	Grab	Effluent

Table 6-4. Permit Limits for West Warren- Viola Utility District STP

Compliance History:

The following numbers of exceedences were noted in PCS:

- 17 Overflows
- 1 Bypass

EFO Comments:

No issues.

6.4.B. Industrial Permits

TN0064629 Bridgestone/Firestone North American Tire, LLC

Discharger rating: Minor
City: Morrison
County: Warren
EFO Name: Cookeville
Issuance Date: 8/30/02
Expiration Date: 8/30/07
Receiving Stream(s): Unnamed tributary at mile 1.0 to Crowfoot Branch at mile 2.9
HUC-12: 051301070303
Effluent Summary: Continuous boiler blowdown, cooling tower blowdown, non-contact cooling water, hot well for curing blowdown, softener backwash, air dryer drains, ornamental fountain, seal water from vacuum pump, condensate from condensing heat exchanger, basement sumps.
Treatment system: Ponds

PARAMETER	*SEASON*	*LIMIT*	*UNITS*	*SAMPLE DESIGNATOR*	*MONITORING FREQUENCY*	*SAMPLE TYPE*	*MONITORING LOCATION*
Flow	All Year		DMax Load	MGD	Weekly	Instantaneous	Effluent
Flow	All Year		MAvg Load	MGD	Weekly	Instantaneous	Effluent
IC25 7day Ceriodaphnia Dubia	All Year	100	DMin Conc	Percent	Continuous	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	DMin Conc	Percent	Continuous	Composite	Effluent
Oil and Grease (Freon EM)	All Year	30	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	30	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	30	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	30	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	30	DMax Conc	mg/L	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	19.7	DMax Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	14.3	MAvg Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	16.7	MAvg Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	17.8	MAvg Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15.5	MAvg Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	13.2	MAvg Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	23.2	DMax Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	25	DMax Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	26.7	DMax Load	lb/day	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	21.5	DMax Load	lb/day	2/Month	Grab	Effluent
Raw Materials Processed	All Year		MAvg Load	lb/day	Monthly	Grab or Composite	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	40	DMax Conc	mg/L	2/Month	Grab	Effluent

Table 6-5a.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	40	DMax Conc	mg/L	2/Month	Grab	Effluent
TSS	All Year	78.9	DMax Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	106.9	DMax Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	57.3	MAvg Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	66.6	MAvg Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	71.2	MAvg Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	61.8	MAvg Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	52.6	MAvg Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	99.9	DMax Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	85.9	DMax Load	lb/day	2/Month	Grab	Effluent
TSS	All Year	92.8	DMax Load	lb/day	2/Month	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Weekly	Grab	Effluent
pH	All Year	6.5	DMin Conc	SU	Weekly	Grab	Effluent

Table 6-5b.

Tables 6-5a-b. Permit Limits for Bridgestone/Firestone North American Tire, LLC

Compliance History:
None noted in PCS.

EFO Comments:
An oil –water separator is an integral part of the wastewater treatment at this facility. The oil water separator is followed by two treatment ponds in series. Residual oil is captured in the first pond and a disposable floating absorbent sock is used for oil skimming and removal. The second pond is used to provide additional holding time and settling. Bridgestone/Firestone uses a commercial lab to analyze for all permit parameters except for pH and flow. The facility discharges in a batch mode. The discharge flow was reported as maximum pumping rate resulting in over - reporting the average TSS and O&G loadings. The facility now records the total flow for each month and calculates the average daily flow.

TN0004359 Burroughs Ross and Colville Co., LLC

Discharger rating: Minor
City: McMinnville
County: Warren
EFO Name: Cookeville
Issuance Date: 3/1/02
Expiration Date: 2/28/07
Receiving Stream(s): Barren Fork River at approximate mile 5.5 for Outfall 001, Town Creek at approximate mile 0.04 to Barren Fork River at approximate mile 5.4 for Outfall 002, and Barren Fork River at approximate mile 5.3 for Outfall 004
HUC-12: 051301070204
Effluent Summary: Log spraying water through Outfalls 001, 002 and 004
Treatment system: -

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-6. Permit Limits for Bridgestone/Firestone North American Tire, LLC Outfall 001.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-7. Permit Limits for Bridgestone/Firestone North American Tire, LLC Outfall 002.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
TSS	All Year	40	DMax Conc	mg/L	Monthly	Grab	Effluent
pH	All Year	9	DMax Conc	SU	Monthly	Grab	Effluent
pH	All Year	6	DMin Conc	SU	Monthly	Grab	Effluent

Table 6-8. Permit Limits for Bridgestone/Firestone North American Tire, LLC Outfall 004.

Compliance History:
The following numbers of exceedences were noted in PCS:

- 3 TSS

EFO Comments:
Company produces wood products, hardwood lumber, bark processing and sawmill. In April 2006, the discharge from the wet deck storage lumberyard carried a significant load of suspended solids. A possibility of primary settling sump near the lumberyard and a settling pond installation prior to discharge offsite was discussed. In September 2006, NOV was issued for discharge of excess solids from outfall 001 causing a visual contrast in the receiving body. Plans for sediment removal are being prepared and are due in EFO office in November 2006.

6.4.B. Water Treatment Plant Permits

TN0074462 Big Creek Water Treatment Plant

City: Tracy City
County: Grundy
EFO Name: Chattanooga
Issuance Date: 9/29/04
Expiration Date: 9/29/09
Receiving Stream: Ranger Creek at mile 7.6
HUC-12: 051301070102
Effluent Summary: Filter backwash from Outfall 001
Treatment system: KMnO4, alum, soda ash, chlorine

Segment	TN05130107016_0710
Name	Ranger Creek
Size	18.3
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-9. Stream Segment Information for Big Creek Water Treatment Plant

Parameter	*Season*	*Limit*	*Units*	*Designator*	*Frequency*	*Sample Type*	*Monitoring Location*
Al (T)	All Year	0.75	mg/L	DMax Conc	Monthly	Grab	Effluent
Fe (T)	All Year	2	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year	0.019	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6.5	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-10. Permit Limits for Big Creek Water Treatment Plant

EFO Comments:
Turbidity removal WTP; treated water not meeting drinking water specifications from Outfall 001; Stream is impaired for iron. Facility cannot increase load.